

WHAT IS CLAIMED IS:

1. Electron window (1) for a liquid-metal anode (2) in the form of a membrane (4), which has ridges (10) and depressions (11), characterized in that it has an embossed structure and both the ridges (10) and the depressions (11) are part-surfaces which are connected to each other via connection flanks (13).
2. Electron window (1) according to claim 1, characterized in that the membrane (4) consists of a metal foil, a diamond film, a ceramic material or a monocrystal, in particular made of cubic boron nitride.
3. Electron window (1) according to one of the previous claims, characterized in that the depressions (11) and/or the ridges (10) are arranged in a virtual regular grid structure (14).
4. Electron window (1) according to one of the previous claims, characterized in that the depressions (11) and/or the ridges (10) are formed as polygonal units, in particular square or hexagonal units.
5. Electron window (1) according to one of the previous claims, characterized in that it is formed bent, in particular like a cut-out section of a cylinder surface.
6. Electron window (1) according to one of the previous claims, characterized in that the depressions (11) and/or the ridges (10) are from 10 to 250  $\mu\text{m}$ , preferably 50 $\mu\text{m}$ , high and the membrane (4) is from 5 to 50  $\mu\text{m}$ , preferably 20 $\mu\text{m}$ , thick.
7. Liquid-metal anode (2) with a pump, a cooling system, a line (9) and a liquid metal which can be pumped through the line (9) by means of the pump, wherein there is arranged in the line (9) an anode module into which an electron window (1) according to one of the previous claims is inserted, wherein the electron window (1) is inserted into the line (9) such that the ridges (10) point towards the inside of the line (9) and are in contact with the liquid metal.

8. X-radiator with an electron source for the emission of electrons and a liquid-metal anode (2) according to claim 7 emitting X-ray beams when struck by the electrons.
9. Method for operating an X-radiator with a liquid-metal anode (2) in which, during the production of X-radiation, stronger turbulence (5) is produced in the flow of the liquid metal below the electron window (1) at the ridges (10).